



Play It Again, Grandma: Effect of Intergenerational Video Gaming on Family Closeness

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Abstract. Population aging, one of the sturdiest demographic trends of the past few decades, is leaving a substantial mark on the relationships and the structure of family. Three and even four generations are now in a position to spend significant parts of their lives together, making it increasingly important to form and maintain strong bonds among older and younger adults in families. One way to achieve this is through shared activities appealing to both sides of the age spectrum. In this study, we examined the potential of joint video gameplay to build or restore intergenerational family relationships. Participants ($n = 183$), mainly grandparents and grandchildren, were asked to play video games together over a period of six weeks. Before and after the treatment, participants completed a modified version of the questionnaire on the inclusion of the other in self as the measure of relationship closeness, as well as responded to a series of open-ended questions post-treatment. Results indicate a significant increase in the inclusion of other in the self. A comparison group ($n = 88$), tasked with having conversations with the same stipulations, yielded considerably less significant results. These findings suggest that video games as a shared activity hold the potential to positively impact family relationships by increasing relationship closeness, and thus improve the lives of both younger and older generation.

Keywords: Older adults · Video games · Inclusion of other in self
Intergenerational gaming · Family relationships · Interpersonal relationships

1 Introduction

The need for entertainment, competition, and challenge is part of human nature—that is how we discovered music, dance, and ultimately games [1]. People have always played games, from the ancient Senet board game, through more hazardous gladiator challenges of the Roman Empire, to contemporary leisure activities such as sports and video games [2]. Huizinga explained that playfulness and games are fundamental elements of civilization, critical for human cultural advancement, where each of us is *homo ludens*—man the player—and games are “a regularly recurring relaxation, the accompaniment, the complement, in fact an integral part of life in general” [1, p. 26]. This is becoming increasingly more prominent today, as the digital age has brought on

the tremendous rise of video games. Games are now pervasive, expanding into many aspects of modern life, from Internet search engine logos to mobile phones, from television to computers. Play is at our fingertips, instantly ready to begin as soon as we decide whether we want to dance to professional choreography, lose in scrabble to grandma who lives on the other side of the country, compete in tennis in our living rooms, fly a fighter jet, or go on a heroic adventure to save the world. While they started off as exercises for a narrow interest group in the last third of the 20th century, the technological revolution of the new millennium brought on the proliferation and accessibility of new computer devices, which in turn broadened video game development to encompass wider audiences, ultimately changing gaming from a marginal subculture to a major component of the mainstream culture [3, 4].

1.1 Sociability of Video Games

While games have historically been seen as collective activities [1], video games are generally perceived as a solitary endeavor [2]. Play with others, however, has been the backbone of video gaming since the beginning; after all, the first video game, *Pong*, was created for two players [5]. The Entertainment Software Association market report [6] revealed that some 54% of gamers play with others, while 45% say it helps their family spend time together. Further research found that the choice of gaming partners influences player's emotional state [7]. Specifically, playing with or against a friend produced deeper engagement, greater social presence, and higher levels of physiological arousal than playing with a stranger or against the computer. While friends use interaction through multiplayer games as a means to maintaining and enhancing their relationships [8], co-playing video games with parents was found to decrease the level of aggressive behavior, and increase prosocial behavior in adolescents [9].

1.2 Effect of Joint Video Gaming on Intergenerational Relationships

More recent studies have focused on the effect of joint video gaming on intergenerational relationships within families, particularly those between grandparents and grandchildren [10–13]. Distinct due to a usually large generational gap, positive grandparent-grandchild relationships have been shown to produce positive psychosocial outcomes for both parties, where grandchildren gain a source of family values, beliefs, and history, as well as social support, and grandparents gain a source of pride and the feeling of being young again [15]. Studies focusing on video games and the aforementioned relationships uncovered that intergenerational gameplay within families yielded social interaction and connectedness, with both younger and older adults finding video games a good platform for bonding [10, 11]. Young adults reported playing video games with older family members mainly as a means of maintaining or deepening the relationship, spending time together, and talking about simple and complex topics in a setting they find comfortable and comforting. Older adults found video gaming with younger family members enjoyable, fun, and bonding, highly rating the informal daily contact and the common ground joint gameplay creates between the two generations [11]. Both generations cherish the social interaction and the confederacy of collaborative play, while younger adults unanimously emphasized the desire to play more with the older adults in their families [11–15].

1.3 Relationship Closeness as Self-other Overlap

In order to understand the family interaction, in which individuals come to accommodate each other, video gaming within families has to be observed as a process in which people and technology adapt to each other over time through design, concession, and interaction. Understanding the aspects of our interactions with and around video games has much to offer to research on interpersonal communication and the adaptation of old social practices into new lifestyles. This is especially true in intergenerational gaming, where older adults who tend to have well-established rituals of social interaction come together with young adults, who have their rituals of social use of technology.

To empirically examine the effect of video gaming on family relationships, especially those among younger and older generations, we considered one of the relationship schemas imperative both to family communication and relational maintenance, inclusion of other in the self (IOS) [17]. Inclusion of other in the self is a measure of relationship closeness “in terms of differing degrees of overlap between the differentiated region that represents the self and the region that to the individual represents the other” [17, p. 597]. In other words, relationship closeness is seen as “people’s sense of being interconnected with another” [17, p. 598]. The self-other overlap construct stipulates that individuals are motivated to form and maintain close relationships owing to an intrinsic yearning to grow, to expand their sense of the self [17]. Inclusion of other in the self develops as the person is motivated to embrace the resources, perspectives, and identities of their relationship partner [17]. Through this process, each individual not only welcomes other’s knowledge and capabilities, but also begins experiencing the world from their point of view to some degree, which is exceptionally important in relationships with a significant generational gap. In a sense, one becomes closer with their relationship partner as the partner becomes more of a part of the self.

In relationships with a high degree of self-other overlap, an individual shares the other person’s perspectives, identities, and resources [17]. In the context of family relationships, young adults who report high IOS with the parent are likely to share beliefs and values, use “we” language, and receive more support from the older adult [18]. Studies have shown that IOS is associated with relational maintenance, where the “model has proven fruitful in understanding the cognitive underpinnings of a variety of relationship phenomena such as the fundamental motivations to enter and maintain relationships” [19, p. 390]. Thus, it stands to reason not only that both younger and older adults are motivated to form stronger bonds, but also that the resulting higher IOS also may be associated with greater closeness in family relationships—that is, the sense of interconnectedness among family members—and with it, relationship satisfaction. With this, we postulated that:

H₁: Regularly playing video games together is positively associated with a higher perceived IOS for both the older and younger adults.

1.4 Purpose of the Study

The aim of this study was to explore the effects of intergenerational video gaming on the bonds between older and younger family members. At the heart of the inquiry was the potential of the shared leisurely activity to build or maintain relationship closeness between family members, especially of different generations, through the increase in self-other overlap. To assess the effect of sharing the activity of playing video games as opposed to simply bonding over a conversation, we employed a mixed-methods longitudinal design to collect both survey data on self-other overlap and detailed personal accounts of the effects of gaming on dyadic family relationships. For comparison purposes, the same design was used to collect data on the effects of regular conversations on intergenerational family relationships, removing the shared gaming factor. The results of this investigation are presented below.

2 Method

To fully understand player interactions and relationship development in and around video gameplay, data were collected through a longitudinal study, using both quantitative and qualitative methods as described below. The participants were recruited from classes at two large universities in southern United States after receiving approval from the appropriate Institutional Review Board. Each participant was asked to select an adult, age 55 and above, from their immediate family circle who would consent to participate in the six-week study. Participants were divided into two broadly defined groups: younger adults (ages 17–35) and older adults (ages 55 and older). The broad demarcation of older adulthood was made with the study's focus on intergenerational family relationships in mind. Younger adults were tasked with selecting the game or games to be played, with input from the older family member where possible. For this study, data were gathered across two experimental groups. The first group, experimental group 1, was tasked with playing video games with their selected family member at least three hours a week, whether in a mediated or co-located setting. To control for the effect of gaming as a shared activity, a comparison group, experimental group 2, was asked to talk to their selected family member at least three hours a week, whether by mediated channels or in person. The data from the dyads were collected over a period of six weeks. Younger adults received partial course credit while older adults did not receive any compensation for taking part in the research.

Group 1 Participants. The sample consisted of 182 participants: 89 older adults, 58 females and 31 males ($M = 1.65$, $SD = .48$), ages 55–77 ($M = 59.43$, $SD = 4.57$), and 93 younger adults, 51 females and 42 males ($M = 1.59$, $SD = .50$), ages 17–28 ($M = 20.39$, $SD = 2.05$). The older cohort ($n = 89$) comprised 75 (84.27%) grandparents, 11 (12.36%) parents, 2 (2.25%) stepparents, and 1 (1.12%) aunt. The younger cohort ($n = 93$) comprised 77 (82.80%) grandchildren, 13 (13.98%) children, 2 (2.15%) stepchildren, and 1 (1.08%) niece.

Group 2 Participants. The sample consisted of 88 participants: 49 older adults, 32 females and 17 males ($M = 1.65$, $SD = .48$), ages 55–71 ($M = 59.57$, $SD = 3.73$), and 49 younger adults, 28 females and 21 males ($M = 1.57$, $SD = .50$), ages 18–25 ($M = 20.84$, $SD = 1.71$). The older cohort ($n = 49$) comprised 44 (89.79%) grandparents, and 5 (10.20%) parents. The younger cohort ($n = 49$) comprised 44 (89.79%) grandchildren, and 5 (10.20%) children.

Data Collection. Considering the pretest-posttest nature of the study, self-completed questionnaires were used to collect standardized and thus comparable information from the participants. All questionnaires were web-based, administered using the Qualtrics survey tool. Web surveys were employed for being easily available and accessible, with the possibility to prompt for missing data or explain potentially difficult sections, which is important given the age of some of the participants and lack of funding for the study. For the same reason and also given the potentially mediated nature of the study, the questionnaires were used to collect narrative data as well, allowing for a broader accessibility. The survey was distributed online. It took approximately 30 min to fill out, with the narrative section approximated at 10 min, depending on the level of detail of the response and typing proficiency of the respondent. All participants were tasked with completing the survey at the beginning and the end of the study.

The pre-test survey consisted of four sections. The first section contained questions on demographic information (including gender, age, and relationship status) and the relationship between the two family members (i.e., parent-child or grandparent-grandchild) participating in the study.

For group 1, the second section comprised questions on previous gaming experiences (e.g. “Have you ever played video games?”, “What games do you play most frequently?”). In the survey, video games were defined as all digital games, including applications embedded in mobile devices or accessible through social media. To assure understanding, pertinent examples were provided for game types, e.g. *FarmVille*, *Candy Crush*, card games. For group 2, the second section comprised questions on the modes and frequency of communication with their family members in general (e.g. “Which family member do you talk to the most?”, “What means of communication do you usually use?”).

For group 1, the third section was available to those who positively responded to the query on previous gaming experience with family members and consisted of questions related to that experience (e.g. “With which family member do you play video games most frequently?”, “Within the past three months, how often have you played video games with this family member?”). For group 2, the third section comprised questions on the modes and frequency of communication with the family member who co-participated in the study (e.g. “How often do you talk?”, “What means of communication do you usually use?”). Both groups were then asked to complete the fourth section of the survey which addressed the self-other overlap, coded per its respective scale, detailed below.

Self-other Overlap. The fourth and final survey section comprised the measure of relationship closeness as an overlap between the other and the self. The self-other overlap was measured using Aron, Aron, and Smollan’s pictorial Inclusion of Other in the Self (IOS) instrument, presented in Fig. 1 [17]. The IOS scale asserts that in a close

relationship, an individual acts as if there is a degree of inclusion of the other within the self so that, for example, close friends believe they are interconnected with each other. The IOS scale consists of a set of Venn diagrams, each representing varying levels of overlap ranging from slight to almost entirely overlapping. One circle in each pair is labeled “self” and the other circle is labeled “other.” The participants were instructed to select the pair of circles that best depicted the nature of perceived overlap with the family member with whom they were participating in the study. The IOS scale has been extensively validated in both experimental and observational studies, with $\alpha = .87$ for family relationships [17].

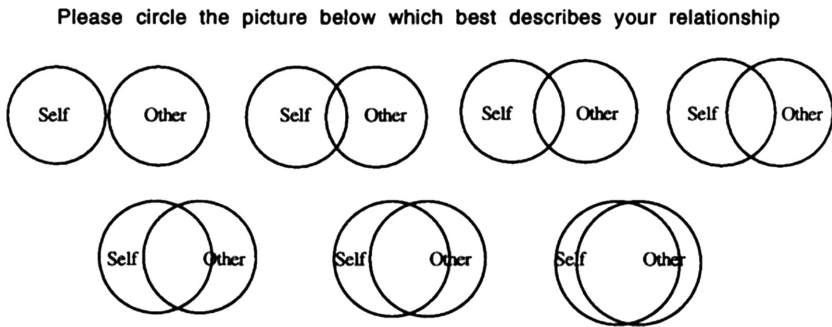


Fig. 1. The Inclusion of Other in the Self (IOS) scale

The post-test survey, completed after six weeks of video gaming and interaction, consisted of four sections. The first section contained questions on demographic information and the relationship between the two family members participating in the study. For group 1, the second section comprised questions on games played, gaming type (collaborative, cooperative, or other) and location (collocated, remote, or other) during the experiment. For group 2, the second section contained questions on the modes and frequency of communication with the selected family member during the study (e.g. “How often did you talk?”, “What means of communication did you usually use?”). The third section comprised repeated self-other overlap measures.

Digital Postcards. The fourth and final section of the post-test survey was designed for narrative data collection, consisting of digital postcards asking the participants to share their experience of the six-week study in their own words. Participants were asked to reflect on their gaming/conversation rituals, the expectations, outcomes, and future plans in relation to joint gaming or conversations. Questions to aid in reflecting on the experience and writing the postcards were provided on the same page.

Data Analysis. Responses to the scaled items for both groups were examined using pretest-posttest statistical analysis. Narrative data was examined using careful, line-by-line content analysis, investigating the context, perspectives, and overall character of the responses. Emerging patterns and themes were uncovered by searching for word repetitions, then analyzing keywords and their context. Themes were grouped

and assigned colors, and the narrative data was highlighted accordingly. Detailed analyses of pretest-posttest surveys and the narrative data for both groups are presented in the next section.

3 Findings

Based on the responses from our participants, we answer our questions about if and in what ways intergenerational game playing may affect the perceptions of self-other overlap as the measure of relationship closeness between family members. Both older and younger adults in group 1 largely reported positive outcomes from playing video games with family members—while enjoyment was an important aspect, maintaining connections with each other and with the home were repeatedly emphasized. The changes in self-other overlap were also noted, as both gained more insight into each other’s lives, knowledge, and thoughts. The effects on group 2 were significantly smaller.

3.1 Group 1: Gaming Group

Group 1 Previous Video Gaming Experience. The majority of the older adults who participated in the study—63 or 70.8%—reported never having previously played video games. None of the remaining 29.2% identified as active gamers or playing video games on a regular basis, but stated they had either tried video games in the past or play sporadically. Their gaming experience included a wide variety of games and platforms, from mobile apps to exergames and sports simulations, to more complex first-person shooters. Younger adults who participated in the study predominantly (82, 88.2%) reported playing or having played video games, of which 29 (31.2%) identified as active gamers who play six or more hours per week. They too reported having played or playing a variety of games on different platforms.

The hypothesis postulated that regularly playing video games together is positively associated with a higher perceived self-other overlap for both the older and younger adults. To assess this hypothesis, a paired t-test was employed to determine whether there was a statistically significant mean difference between the perception of inclusion of other in self before and after the six-week gaming treatment. The results of the paired t-tests are presented in Table 1.

Table 1. Results of pretest and posttest IOS for younger and older adults for Group 1.

Variable/Results	N	Pretest-posttest diff. of M	SD	t	p
Inclusion of other in self for younger adults	93	1.44	.71	19.46	.000
Inclusion of other in self for older adults	89	1.30	.79	15.58	.000

Among younger adults, there was a statistically significant difference between pretest ($M = 3.81$, $SD = 1.40$) and posttest ($M = 5.25$, $SD = .99$), $t(92) = 19.45$, $p < .0001$, $CI.95$ 1.29, 1.59. Cohen's effect size ($d = 1.19$) suggests a large increase in the perception of self-other overlap. The difference in the perception of inclusion of other in the self between pretest ($M = 4.22$, $SD = 1.95$) and posttest ($M = 5.53$, $SD = 1.39$), $t(88) = 15.58$, $p < .0001$, $CI.95$ 1.14, 1.46, was also significant for older adults. Cohen's effect size for older adults ($d = 0.77$) suggests a moderate to high increase in the perception of self-other overlap. The hypothesis was thus supported for both test groups, with younger adults experiencing a more significant change.

3.2 Group 2: Conversation Group

Testing the conversation treatment group data for the same effects yielded significant outcomes, albeit much smaller. A paired t-test was employed to determine whether there was a statistically significant mean difference between the perception of inclusion of other in self before and after the six-week conversation treatment, finding a clear increase in the self-other overlap for both groups. The results of the paired t-tests are presented in Table 2.

Table 2. Results of pretest and posttest IOS for older and younger adults for Group 2.

Variable/Results	N	Pretest-posttest diff. of M	SD	t	p
Inclusion of other in self for younger adults	49	.36	.91	2.84	.007
Inclusion of other in self for older adults	49	.22	.59	2.68	.010

Among younger adults, there was a statistically significant difference between pretest ($M = 4.27$, $SD = 1.38$) and posttest ($M = 4.63$, $SD = 1.52$), $t(49) = 2.84$, $p = .007$, $CI.95$.12, .63. Cohen's effect size ($d = 0.25$) suggests a small increase in the perception of self-other overlap. The difference in the perception of inclusion of other in the self between pretest ($M = 4.49$, $SD = 1.12$) and posttest ($M = 4.71$, $SD = 1.29$), $t(49) = 2.68$, $p = .0101$, $CI.95$.06 .39, was also significant for older adults. Cohen's effect size for older adults ($d = 0.18$) suggests a small increase in the perception of self-other overlap.

3.3 Comparison Between the Groups

For both groups, the inclusion of other in the self pretest-posttest analysis follows the same trend, if not quite with the same effect size, as evident from Fig. 2.

As we can see, the conversation group started off with a higher perception of self-other overlap and experienced a distinctively smaller increase over the course of the study. It is important to note that in both groups, younger adults underwent a steeper increase than older adults.

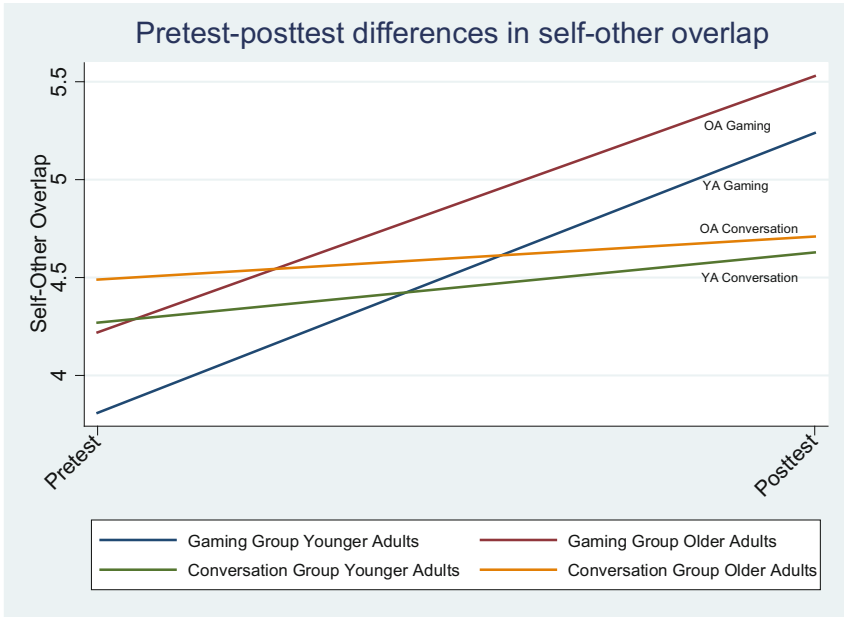


Fig. 2. Differences in IOS between pretest and posttest for both groups

3.4 Group 1: Qualitative Findings

In the final part of the closing survey, gaming group participants were asked to describe their six-week joint gaming experience—which games they played, did they compete or collaborate, what was the usual gaming ritual, what stood out to them the most, how did they feel about it at the beginning and the end of the study, will they continue playing video games together.

Time spent together and the resulting sense of closeness were in the center of most responses. As one female participant (57) noted:

My daughter is my oldest child so we have an extremely close bond. Now that she's older, it's hard for us to do fun things together even though we live in the same city. Even though it was a silly phone game for school, I appreciated the extra time we were able to spend together and I was surprised at the amount of time we actually spent engaged in conversation while doing this project. I think that more than anything that time actually made our relationship stronger.

Younger adults shared similar experiences, as a male participant (19) elaborated:

I found that we exchanged text messages more often during this time because my dad is a big trash talker. My dad and I already are very close but I'd say that this added an extra element to our relationship! It was great doing something together and it gave us something out of the norm to look forward to!

For some, it was about feeling physically closer to their family member, said one grandmother (63):

With these video games, as simple as it may sound, reconnects you again no matter how far. While I played, it made me think of her, and when she played, it made me feel like we were connected even though we were not in the same city. It made me feel close to her and we enjoyed it.

A younger female participant (18) concurred:

I liked that we were playing together. It was a nice since the game put us both in position to have conversations about the game and other things in her and my life at the moment. She is about 900 miles away from me so it was a nice way to keep connected and share in each other's lives.

More than two-thirds of both older and younger adults (74.2% and 69.9% respectively) cited more frequent communication and spending more time together as the outcomes of the six-week joint gaming, while 24 (25.8%) younger adults and 31 (34.8%) older adults specifically cited an effect on the sense of interconnectedness or relationship closeness. A female participant, age 74, said:

Playing games with my grandson keeps me sharp. We joke and talk and compliment each other on good moves. I love that he treats me as an equal and doesn't hold back. Playing games has brought us closer, in my opinion. Doing this with [my grandson] is now one of the joys in my life. I feel that playing games together has taught us both different things, we have learned from each other and about each other.

Participants' narratives provided a deeper understanding of their experiences, and perhaps an insight into potential moderating elements that occurred during the study. Primarily, both younger and older adults found new ways of connecting to their family members, whether through more frequent conversations, broader selection of topics, shared subjects, or pure entertainment. Gathering around the novel activity allowed participants the space to talk and listen in a relaxed environment, and they largely reported bonding and enjoyment, with older adults also placing emphasis on learning and acquiring new skills.

3.5 Group 2: Qualitative Findings

Unlike the gaming treatment group, for the conversation group time spent together and the resulting perception of closeness were not the focus of most narrative responses. As a matter of fact, only 10 (20.4%) younger adults and 14 (28.6%) older adults specifically referred to increased relationship closeness in their digital postcards. For some, as one female participant (21) noted, this is simply because three hours of talking per week was not beyond their usual routine:

I live with my parents, so I see them every day. My [extended] family is also close, and we talk on the phone daily. There are times when I think they are too involved in my life and I get annoyed, but then I remember how lucky I am to have them. This assignment did not really make me go out of my way, although I did spend more time than usual talking to my grandma. She lives 10 min from my parents, so we just added our phone conversations with hanging out or shopping during the weekend.

For others, however, it was a bonding experience, as observed by one son (22):

I actually started calling my mom a couple of times a week to talk. I get along with her much better than with my dad and am more comfortable sharing things about myself and my life. I think she liked it too because I initiated the weekly phone calls and now she does it more. We definitely grew closer and she knows more about what's going on with my life than my brother.

Older adults shared similar stories and relished spending time with their family members, as a male participant (62) explained:

[My grandson] and I decided to do our "talking" during the weekend since we both have busy weeks, and he was at my door on Saturday nights with a half a gallon of ice cream and a war movie. Next weekend, I am barbecuing. We do talk when he is here, mainly about my late wife, or about his school and life. I like that it's brought us closer. He has grown to be a good man, and I am proud of him.

For one older female participant (59), it was about feeling better together:

When I was younger, I envisioned my kids and grandkids living near. Well, fate has a funny way of changing your life. When I fell ill 2.5 years ago, I had to move in with my daughter and her family. It's been difficult on everyone: I despise losing my independence and my daughter despises losing her freedom. But we love and respect each other and make it work. Helping my granddaughter with this school project, we talked to each other like two adults for the first time. We both opened up and I feel we are closer than ever before.

To summarize, in some measure, both younger and older adults appreciated the experience, connecting over deeper conversations, broader selection of topics, and newfound shared interests. For some, talking three hours a week was not outside the norm, while for others it created both opportunities and challenges. Opportunities were found in discovering more about family members, be it positive or negative. Challenges arose for both cohorts in having their voices heard during the conversation, dealing with arguments, boredom, and the lack of common topics that would move the chats from the realm of mundane. Majority of the participants do not plan on continuing with weekly conversations with family members, preferring that chats arise naturally.

4 Conclusion

In this study, we hypothesized that regularly engaging in a social activity—in this case, regularly playing video games together—will be positively associated with a higher perceived self-other overlap for both older and younger adults in the family. This was certainly true—while they played video games, in the background their relationships changed. The shift materialized in the significant upward slope of self-other overlap for both groups, indicating an increase in the perception of relationship closeness. This outcome suggests that playing video games together indeed creates a platform for the expansion of family relationships. Narrative accounts supported these findings. The opportunity for conversation and bonding attracted both younger and older adults. The older cohort, largely consisting of individuals who have never played video games before, found the experience entertaining, interesting, and gratifying. The younger cohort enjoyed the opportunity to display their expertise to older family members while

in turn discovering more about them and receiving the benefit of an interested listener and adviser. Younger adults also gained greater awareness of their older gaming partners' knowledge and capabilities, while older adults saw their relationships with post-adolescents as more rewarding. The significance of these findings lies in the apparent ability of video games to serve as a bridge between generations, helping (re)form and maintain relationships that, when tended, can have a profound influence on the lives of both younger and older adults.

The findings of the comparison group were less stellar. While there was certainly an increase in the self-other overlap after the six-week conversation treatment, it was very modest. According to the illuminating narrative reports, the cause may be in the lack of motivation as most of the participants did not find the weekly conversations particularly rewarding. While the gaming dyads gathered around a fun activity, which added a dose of excitement and an environment that not only allowed for sharing stories but creating them too, the conversation group were left to their own devices, finding topics and ways to push through arguments and awkward pauses. As a matter of fact, accounts that reviewed the conversation experience positively, and saw it as bonding mostly also engaged in some shared experiences, such as shopping, watching a show, or pet sitting. The slightly higher increase in self-other overlap for younger adults possibly resulted from increased motivation as their participation in the study was a part of the class credit.

Overall, it can be said that the gaming group experienced larger effects post-treatment. For both younger and older adults, positive emotions such as happiness and enjoyment coalesced with—and stemmed from—the bonding, the conversations, the feeling of being closer to loved ones and of maintaining relationships across distances. They used the platform to spend time together, and have fun, talk, and generally take part in each other's lives.

Ironically, not all was fun and games in this group. Despite positive outcomes, only half of the older adults and less than half of the younger adults plan to continue playing with their family member. The cause of this lack of motivation to continue is clear—younger adults have considerably underestimated the technical abilities of their older family members, as well as their capabilities in mastering new forms of electronic entertainment. Thus, younger adults largely selected games based on old tabletop models, such as *Trivia Crack* and *Words with Friends*. Such games have a minimal learning curve and are less involving, which in turn led to older adults becoming bored towards the end of the six-week gaming period, and younger adults already being disinterested in these unchallenging apps. While some concerns about game accessibility may be valid, as many older adults do dread the fast response time requirements and the complex controls, this concern should be addressed and removed as an obstacle in enjoying the many worlds and stories video games provide.

5 Implications

With each year, the aging population grows [20]. In the same time, especially in the Western world, it seems that the use of technology has led to people living in the same space but rarely spending “quality time together,” actually interacting and bonding. While popular media continuously emphasize the importance of meaningful interactions among

family members and friends for the strength of the relationships, resulting in calls for sharing meals without distractions, with the wide introduction of personal computers, tablets and smartphones, the silence and distance are becoming more pervasive. However, as this and other recent studies show, the same technology can be used to counter this effect and enhance lives across generations. With careful design and consideration of current and potential players, video games have the capacity to positively impact families and social life in general, bridging the distance and drowning the silence [10, 12, 21].

6 Limitations

As with any research, this project has its limitations. First, the participants were selected using a sampling procedure of convenience rather than randomized sampling of a larger population. Furthermore, all participants are from the United States, which affects the generalizability of the findings. In addition, for younger adults the participation was a part of the course requirement, which may have impacted their perception of the project—must vs. want—and thus the level of their participation and satisfaction. Finally, the selection of the games was left to younger participants, who chose games based on their perception of the older adults' abilities and skills. Future research should address the limitations to this study, as well as examine more specific aspects of variable influences, examining the effect of specific games, of existing relationships, family patterns, and emotional and physical states. These additional motivations are important to gaining a more complete picture of shifts in family relationships and how video games can be used to help balance them.

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